



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,180	04/04/2005	Go Nagaya		5597

23373 7590 07/18/2007
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT	PAPER NUMBER
----------	--------------

3618

MAIL DATE	DELIVERY MODE
-----------	---------------

07/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,180

Applicant(s)

NAGAYA, GO

Examiner

Frank Vanaman

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/4/05</u> | 6) <input type="checkbox"/> Other: ____ |

Priority

1. Receipt, from the International Office, is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement received April 4, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

3. The disclosure is objected to because it is replete with grammatical informalities, such as: on page 1, line 10, "is being" should be --has been-- for agreement with "in recent years"; on page 1, the last line, "not only the steering torque becomes large" is informal; on page 2, lines 2-3 "such as a spring around its legs" is informal. **This is an exemplary listing only.** The entire specification should be carefully reviewed and revised for grammatical informalities.

Appropriate correction is required.

Claim Objections

4. Claim 1 is objected to because of the following informalities: in claim 1, line 8, it appears as though a word (such as --is--) is missing between "and" and "fitted". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are replete with instances of confusing and/or indefinite language. In claim 1, lines 2 and 8-9 (and throughout the remaining claims) the reference to a "steering wheel" is confusing in that the term is generally employed to refer to an operator controlled element in a vehicle for directing a steering angle, in claim 1, line 3 "the non rotary side" lacks a clear antecedent basis (note claim 2, line 2; claim 3, line 2; claim 4, line 2, etc.); in claim 1, line 4-5, it is not clear what is

Art Unit: 3618

meant by "locked in a steering direction"; in claim 3, line 3; claim 4, line 3 and claim 6, lines 4-5; it is not clear what is meant by a "direct-moving guide"; in claim 6, lines 7-8, it is not entirely clear which attributes of a constant velocity joint are intended to be applied to the recited coupling; in claim 6, lines 8-9, the phrase describing the coupling as having "the center of its movement on a king pin axis" is unclear in that (a) the nature of the coupling itself is not clear (see the reference to claim 6, lines 7-8) and (b) such a coupling may have numerous degrees of freedom, and a definition or description of its movement is not clearly set forth.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (US 3,472,331) in view of Iizuka et al. (US 5,224,563). Baker et al. teach an arrangement for the driving of a steerable wheel (42) including a first knuckle (14) connected to a non-rotating vehicle portion and which supports, in a non-steered configuration, a drive assembly (12, 16) a second knuckle (19, 21, 82, 85) which is steerable, pivotally mounted with respect to the first knuckle about a king pin axis (Y), the arrangement additionally fitted with a braking arrangement (56, 58), wherein drive force is provided to the wheel hub through a mechanical arrangement including a flexible constant velocity joint (26) having a center (C) along the king pin axis (Y) and including two direct moving portions (e.g., 20 and 28) connected to one another by a pair of joints (orthogonal to one another) such that the axes of movement intersect at the center (C). The reference to Baker et al. fails to teach the drive source as comprising a motor. Iizuka et al. teach that it is well known to provide the steerable wheels of a vehicle (23, see top of figure 5) with drive motors. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a motor

Art Unit: 3618

drive as taught by Iizuka et al. for driving the wheels of the vehicle taught by Baker et al. with the non-moving portion of the motor connected to the non-steered portion of the vehicle frame (as also suggested by Iizuka et al.), for the purpose of reducing or eliminating emissions in city driving scenarios.

As regards the provision of a steering rod for rotating the steerable portions with respect to the non-steerable portions, in that (a) Baker et al. teach an arrangement for a steerable wheel and (b) it is very well known in the vehicle arts to connect a steering rod to a pivoting wheel support to allow the wheel to be steered, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a steering rod connected to the second knuckle portion in order to allow the wheel to be steered.

8. Claims 2-6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. in view of Iizuka et al. and Nelson (US 3,468,389). The references to Baker et al. and Iizuka et al. are discussed above and fail to teach the connection of the motor to the non-steered knuckle portion by an elastic body or damper, and 'direct-moving guides' in vertical and horizontal directions. Nelson teaches an old and well known arrangement for mounting a motor in a vehicle drive arrangement, wherein a motor (12) is mounted to non-steered portions of a vehicle (e.g., 62, 67) with plural resilient bushing elements (44, 46) and direct moving guide portions (50) being separately oriented in horizontal (58) and vertical (52) orientations and being provided with further resilient buffer members (36, 36, 37, 37). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mounting of the motor drive connected to the non-steered vehicle portions (and thus to the non-steered knuckle portion) of the vehicle of Baker et al. as modified by Iizuka et al. with the resilient and direct moving buffer and guide arrangement taught by Nelson, for the purpose of isolating the motor and frame so as to absorb torque reaction of the motor and cushion the motor from shocks and vibrations generated in the drive axle.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Orain (US 4,273,209), Nishikuma et al. (US 5,048,859),

Art Unit: 3618

Yamashita et al. (US 5,180,180), Alessandro et al. (US 6,148,945), Villeneuve (US 6,866,114), and Haas (US 6,904,987) teach vehicle drive arrangements of pertinence.

10. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618



9/12/07